

GCSE 2004

June Series



Mark Scheme

Design and Technology: Graphic Products *(3553/Short Course Foundation)*

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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The answers given in the following mark schemes are neither exhaustive nor exclusive. Candidates whose answers do not appear directly on the mark scheme, but who have demonstrated knowledge, understanding, or skills relevant to the question will receive appropriate credit for their answers.

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ASSESSMENT AND QUALIFICATIONS ALLIANCE

GENERAL CERTIFICATE OF SECONDARY EDUCATION

June Examination 2004

Design and Technology Graphic Products

Short Course Foundation Tier

Question 1 Data Representation

Bar Chart				
(a)	Accuracy	three correct height \pm 1mm	3 marks	
	(visual check)	two correct	2 marks	
		one correct	1 mark	
		none correct	0 marks	(3 marks)
(b)	Colour	good, even, within borders	2 marks	
	(inc. hatching)	some outside borders	1 mark	
		consistently outside borders/not attempted	0 marks	(2 marks)
(c)	Key	all three bars colours (hatching) match key	1 mark	
		incorrect	0 mark	(1 mark)

Total 6 marks**Question 2 Designing****Box 1 Decoration – Mountains**

	Three different good quality, relevant designs well communicated	(3 x 2)	6 marks	
	Satisfactory designs, mountains suggested	(pro rata 1 mark)		
	Not attempted	(pro rata 0 marks)	0 marks	(6 marks)

Colour	Used or indicated	1 mark	(1 mark)
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Box 2 Logo

	Good quality development of an idea	3 marks	
	Discrete ideas or limited evidence of development or all single line thicknesses	2 marks	
	One idea	1 mark	
	Totally inappropriate/not attempted	0 marks	(3 marks)

Box 3 Embossing

	Embossing indicated? (which feature?)	1 mark	
	Appropriate to design – justified by text or thick/thin/shadow/3D	1 mark	
	Not appropriate	0 marks	(2 marks)

Evaluation (Best Evidence)

	Critical, relevant/justified	3 marks	
	Generalisations, but relevant to design	2 marks	
	Superficial, self congratulatory, labels, descriptive	1 mark	
	Not attempted/not relevant	0 marks	(3 marks)

Total 15 marks

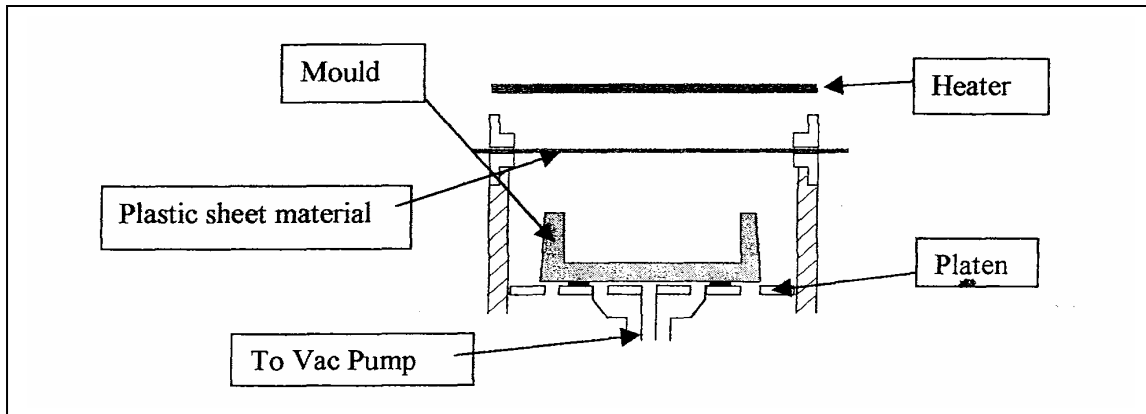
Question 3 Presentation

- (a) Accuracy (any orientation – ‘landscape’ or ‘portrait’)
- | | | |
|----------------------|---------|-----------|
| Both, 150 x 90 ± 2mm | 2 marks | |
| Any one accurate | 1 mark | |
| Both incorrect | 0 marks | (2 marks) |
- (b) (i) Use of spec: pro rata, one mark per criteria
- | | | |
|--|------------|-----------|
| logo with A1C | 4 x 1 mark | |
| mountains | | |
| colours implying quality | | |
| embossing – evidence of raised surface e.g. thick line | | |
| emphasis, 3D effect, etc. | | (4 marks) |
- (ii) Quality of Drawing:
- | | | |
|---|---------|-----------|
| Very good line quality, clear, neat, etc. | 3 marks | |
| Adequately drawn, some reasonable lines | 2 marks | |
| A fair attempt, lacks precision | 1 mark | |
| Scribble/Not attempted | 0 marks | (3 marks) |
- (iii) Combining Ideas
- | | | |
|---|---------|-----------|
| All 4 elements faithfully brought forward – (can be repositioned) | 2 marks | |
| Some elements brought forward | 1 mark | |
| Nothing brought forward (<i>different design</i>) | 0 marks | (2 marks) |
- (iv) Layout
- | | | |
|--|-----------|-----------|
| Very effective, consistently good, e.g. spacing, proportion, good use of space, use of guide lines | 5-4 marks | |
| Satisfactory, sense of composition, adequate spacing, some imperfections | 3-2 marks | |
| An attempt but lacks clarity and/or poorly spaced, crowded | 1 mark | |
| Unrecognisable or not attempted | 0 marks | (5 marks) |
- (v) Colouring
- | | | |
|---|---------|-----------|
| Good quality, enhances drg, visual impact, e.g. good tonal control, very good block colouring | 5 marks | |
| Satisfactory, controlled use of media, some attempt at higher skills e.g. tone, block colour | 4 marks | |
| Moderate quality, some enhancement, (good monochrome max.) | 3 marks | |
| Poor quality, untidy/scribble, does little to enhance product | 2 marks | |
| An attempt – very poor, scribble | 1 mark | |
| No colour – line drawings only | 0 marks | (5 marks) |
- (c) (i) What is expected.
- | | | |
|---|--------|----------|
| Reward appropriate information, e.g. bar code | | |
| Safety – not toy, small parts, contamination. | | |
| Instructions – how to use items | | |
| Manufacturer – address | | |
| Contact details, recycling/environment | | |
| Symbols, animal testing, warning | 1 mark | (1 mark) |

Explanation – Clear understanding, relevant to product	2 marks	
Some understanding evident	1 mark	
One word, no clarification	0 marks	(2 marks)
 (ii) What is expected.		
Reward appropriate information, e.g. bar code		
Safety – not toy, small parts, contamination.		
Instructions – how to use items		
Manufacturer – address		
Contact details, recycling/environment		
Symbols, animal testing, warning	1 mark	(1 mark)
 Explanation – Clear understanding, relevant to product		
Some understanding evident	2 marks	
One word, no clarification	1 mark	
	0 marks	(2 marks)
Total 27 marks		

Question 4 Vacuum forming, enlargements & B.S.

(a) (i) Thermoplastic	1 mark	(1 mark)
 (ii) e.g. ‘plastic when hot’, ‘remouldable’, good, clear, concise understanding		
some understanding, fair attempt	2 marks	
Incorrect, wrong	1 mark	
	0 marks	(2 marks)
 (b) Correct answers		
	1 x 5 marks	(5 marks)



(c) Vacuum forming		
<i>e.g. tapered mould, heat plastic, ‘blow’ raise platen, ‘suck’, remove heat, ‘blow’ lower platen, remove moulding</i>		
good, correct order, clear, concise understanding	5-4 marks	
some understanding, fair attempt	3-2 marks	
an attempt, some idea poorly communicated	1 mark	
Incorrect, not attempted	0 marks	(5 marks)

Total 13 marks

Question 5 Enlargement & B.S.

(a) (i)	Accurate outline successfully transferred, 1 square in.	4 marks	
	Good attempt, one error	3 marks	
	Fair attempt, some correct features e.g. lacks symmetry	2 marks	
	An attempt, tree shape apparent	1 mark	
	No relationship to example, not attempted	0 marks	(4 marks)
	Hole, position and size compatible with example	1 mark	
	Not attempted, incorrect size or position	0 marks	(1 mark)
(ii) BS	Both leader lines, small gaps, small neat and correct arrowheads		(1 mark)
	Dimension lines solid, parallel, touching		(1 mark)
	Numbers, above line, centre position		(1 mark)
Scale	2:1 (only possible answer – tick or cross)	1 mark	(1 mark)
(b)	Will it work? e.g. cord, string, thread, sticker, ‘sucker’	1 mark	(1 mark)
	<u>Sketching</u> : quality, clear, communicates well	2 marks	
	Adequate sketch, conveys concept	1 mark	(2 marks)
Notes:	Clear, concise, justified	2 marks	
	Less clear, labels only	1 mark	
	Confused, not attempted	0 marks	(2 marks)

Total 14 marks**Question 6 Materials**

(a)	Must relate to ‘Typical Use’, given in question (pro rata 4 x 1) e.g. - a thermoplastic, transparent, thin, easy to mould - flat, easy to cut, good finish - thermoplastic, translucent, readily available - absorbs shock, good strength/weight - ease of cutting, lightweight, takes finishes <i>One word answers will not give reasoned response (0 marks)</i>	4 marks	(4 marks)
(b)	How the ink reacts, e.g. heat causes the crystals in the film to change colour, seen on outside by temp. marker, when cool crystals revert to ‘black’ and temp. bar disappears. Reversible process		
	Good understanding, e.g. reversible, line moves up/down scale	4 marks	
	Some understanding, general principles – ref. inks, crystal, pigments	3 mark	
	An understanding, basic terms – ref. colour/temperature	2 marks	
	A fundamental knowledge, vague – how thermometer works	1 mark	
	Incorrect, not attempted	0 marks	(4 marks)

Total 8 marks

Question 7 Environmental, Cultural, Social Issues

- (a) Must relate to air fresheners
e.g. some suggestion of contamination, health risk, preserves, tamper proof, protects contents.
Do not reward reference to card decoration
- | | | | |
|----------------|--|-------------|-----------|
| <u>REASONS</u> | Justified statement, reasons clearly expressed | 2 x 2 marks | (2 marks) |
| | Simple, unsupported statement | 2 x 1 marks | (2 marks) |
| | Not attempted, inappropriate reasons | 0 marks | |
- (b) Must relate to these packages.
renewable
- | | | | |
|--|--|--------|----------|
| | | 1 mark | (1 mark) |
|--|--|--------|----------|
- e.g. wood based, can be replaced, managed forestry, environmentally friendly, promotes wildlife etc.*
- | | | | |
|--|---|---------|-----------|
| | Justified statement, reasons clearly expressed | 2 marks | |
| | Simple, unsupported statement, e.g. replaceable | 1 mark | |
| | Not attempted, inappropriate reasons | 0 marks | (2 marks) |
- (c) (i) *e.g. has been made from recycled materials*
- | | | | |
|--|---|---------|-----------|
| | Good understanding | 2 marks | |
| | Some understanding, or ref to recycling | 1 mark | |
| | Incorrect, not attempted | 0 marks | (2 marks) |
- (ii) *e.g. link green to environment*
- | | | | |
|--|---|---------|-----------|
| | Good understanding of link | 2 marks | |
| | Some understanding, or ref to appropriateness | 1 mark | |
| | Incorrect, not attempted | 0 marks | (2 marks) |
- (iii) *e.g. link to re-cycling, re-use etc.*
- | | | | |
|--|---|---------|-----------|
| | Good understanding of link | 2 marks | |
| | Some understanding, or ref to appropriateness | 1 mark | |
| | Incorrect, not attempted | 0 marks | (2 marks) |
- (iv) *e.g. link to amount of re-cycled material in product*
- | | | | |
|--|---|---------|-----------|
| | Good understanding of link | 2 marks | |
| | Some understanding, or ref to appropriateness | 1 mark | |
| | Incorrect, not attempted | 0 marks | (2 marks) |
- (v) *e.g. danger of contamination, poisonous*
- | | | | |
|--|---|---------|-----------|
| | Good understanding of link | 2 marks | |
| | Some understanding, or ref to appropriateness | 1 mark | |
| | Incorrect, not attempted | 0 marks | (2 marks) |

Total 17 marks**Total Paper 100 marks**